

REMARKS

Claim 7 has been canceled without prejudice or disclaimer of the subject matter thereof. Applicants reserve the right to pursue the subject matter of the canceled claim in the subject application and/or subsequently filed continuing applications.

Claims 1 - 3, 5 - 6, and 8 have been amended.

Claims 1 - 6, and 8 are present in the subject application.

In the Office Action of May 15, 2008, the Examiner has rejected claims 1 - 8 under 35 U.S.C. §103(a). Reconsideration of the subject application is respectfully requested in view of the following remarks.

The Examiner has rejected claims 1 - 8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,190,901 (Farmer et al.) in view of U.S. Patent No. 5,481,542 (Logston et al.). This rejection is moot with respect to canceled claim 7.

Briefly, the present invention embodiments are directed toward systems and methods for providing reverse signals from a plurality of DHCTs to a downstream modulator that is located in the headend facility. The present invention includes a single wire return device (SWRD) that receives RF modulated signals, dynamically determines the address of the associated modulator, and converts the signals into Ethernet signals. The Ethernet signals are subsequently provided to the headend facility via fiber cable.

In conventional systems, upstream demodulators are collocated with downstream modulators, thereby enabling identification of the particular downstream modulator needed to respond to the DHCT. However, in the present invention embodiments, the downstream

modulator in the headend facility is not directly coupled to the upstream demodulator (in the SWRD). Thus, in order to identify the appropriate downstream modulator, the present invention embodiments provide that the DHCT receives an identifier for the downstream modulator, and inserts the identifier in the reverse signals. The identifier is converted to an IP address to enable the reverse signals to be directed to the appropriate downstream modulator.

The Examiner takes the position that the Farmer et al. patent discloses the claimed invention, except for the downstream modulator having an identification number that is inserted into the forward signals, and the reverse RF signals including header information and payload data. The Examiner further alleges that the Logston et al. patent discloses these features, and that it would have been obvious to combine the Farmer et al. and Logston et al. patents to attain the claimed invention.

This rejection is respectfully traversed since neither the Farmer et al. patent nor Logston et al. patent disclose, teach or suggest inserting the modulator identification number in the forward and reverse signals, and converting the modulator identification number of the downstream modulator to an IP address in the reverse path as recited in the independent claims. However, in order to expedite prosecution of the subject application, independent claims 1 and 5 have been amended to further clarify these features. In particular, independent claim 1 recites the features of: at least one digital home communications terminal (DHCT) for receiving forward signals from a headend facility and for transmitting reverse RF signals to the headend facility; a single wire return device (SWRD) for receiving the reverse RF signals from the at least one DHCT, demodulating the reverse RF signals via an upstream demodulator, and

converting the demodulated signals to Ethernet signals; a plurality of downstream modulators located in the headend facility remote from the upstream demodulator with each downstream modulator associated with at least one corresponding DHCT and having an identification number that is inserted into the forward signals from the headend facility to identify that downstream modulator to the at least one corresponding DHCT, one of the downstream modulators associated with the at least one DHCT for receiving the optical signals and for sending the forward signals; the at least one DHCT inserting the modulator identification number received within the forward signals from the headend facility into the reverse header information; and the SWRD converting the modulator identification number within the reverse header information into an Internet Protocol address to enable the reverse signals to be directed to the one downstream modulator.

Independent claim 5 recites the features of: receiving forward signals from a headend facility and generating a reverse RF modulated signal in a digital host communications terminal (DHCT); a plurality of downstream modulators located in the headend facility with each downstream modulator associated with at least one corresponding DHCT and having an identification number that is inserted into the forward signals from the headend facility to identify that downstream modulator; the reverse RF modulated signal including the identification number of the downstream modulator associated with the DHCT in header information; demodulating the reverse RF modulated signal via an upstream demodulator remote from the plurality of downstream modulators to provide a reverse demodulated signal; processing the reverse demodulated signal to provide a reverse Ethernet signal, wherein the identification

number is converted into an Internet Protocol address that enables the reverse Ethernet signal to be directed to the associated downstream modulator; and receiving the reverse optical signal at the associated downstream modulator located in the headend facility, wherein the downstream modulator transmits a forward signal to the DHCT in response to the received reverse optical signal.

The Farmer et al. patent does not disclose, teach or suggest these features. Rather, the Farmer et al. patent discloses a return path system. The system includes inserting RF packets between regular upstream data packets, where the data packets are generated by communication devices, such as a computer or internet telephone. The RF packets can be derived from analog RF signals that are produced by legacy video service terminals. In this way, the system can provide an RF return path for legacy terminals that shares a return path for regular data packets in an optical network architecture.

Thus, the Farmer et al. patent discloses a manner to provide an RF return path for legacy video service terminals in an optical system by interleaving RF packets derived from RF signals produced by those terminals with regular data packets. There is no disclosure, teaching or suggestion of identification of a downstream modulator at a headend facility from among a plurality of downstream modulators by transmitting in forward signals a modulator identifier to the DHCT for insertion in reverse signals, and conversion of the modulator identifier to an IP address in the return path as recited in the independent claims. In fact, the Examiner concedes that the Farmer et al. patent does not disclose these features at Page 4 in the Office Action.

The Logston et al. patent does not compensate for the deficiencies of the Farmer et al. patent. Rather, the Logston et al. patent discloses a digital video, audio and data distribution system which enables a set-top terminal (STT) associated with a customer's television set or other information presentation device to request interactive digital video, audio and data services from a service provider (SP) through the use of control system messages transmitted via a bi-directional signalling path. The requested interactive service is transmitted from the service provider (SP) over a portion of the bandwidth of a broadband transmission network which is dedicated to interactive digital services. A Video Session Connection (VSC) is provided for setting up and maintaining interactive sessions between the set-top terminal (STT) and a video service provider (SP) during the time the interactive programming is provided to the customer. The set-top terminal (STT) and service provider (SP) establish the Video Session Connection (VSC) via a two-way signalling path within the bandwidth of the transmission medium into the customer's home (e.g., See Abstract).

The signalling path is established and maintained by a connection management computer (CMC) that manages sessions between the set-top terminal (STT) and service provider (SP), and is further responsible for: provisioning a demultiplexer/modulator, the set-top terminal (STT), and QPSK modulators and demodulators; providing routing information to a digital network between the service provider (SP) and headend; and providing information session management between the set-top terminal (STT) and service provider (SP) (e.g., See Fig. 2; Column 5, lines 50 - 53; and Column 6, lines 43 - 51). The set-top terminal (STT) or service provider (SP) may send a request for an information service to the connection management computer (CMC). The

connection management computer (CMC) determines if there are resources available and, if so, establishes a service connection from the service provider (SP) to the set-top terminal (STT). The connection management computer (CMC) sends the service information to the set-top terminal (STT) and service provider (SP) to allow them to connect to the network and begin the requested interactive information service (e.g., See Column 6, lines 51 - 59).

Thus, the Logston et al. patent discloses service connections being established between a service provider (SP) and set-top terminal (STT) via a connection management computer (CMC). There is no disclosure, teaching or suggestion of identification of a downstream modulator at a headend facility from among a plurality of downstream modulators by transmitting in forward signals a modulator identifier to the DHCT for insertion in reverse signals, and conversion of the modulator identifier to an IP address in the return path as recited in the independent claims.

The Examiner construes modulator 124 as the claimed downstream modulator and concludes that this modulator must have an identification number inserted into the QPSK forward signals (where identification of the headend also acts to identify the modulator). However, modulator 124 is used for the forward signalling path between the service provider (SP) and set-top terminal (STT) provided by the connection management computer (CMC). The modulator receives signals from the connection management computer (CMC), where the output of the modulator is provided to an RF combiner receiving further signals from the demultiplexer/modulator (providing digital video and audio data from the service provider (SP)) (e.g., See Fig. 2; Column 6, lines 20 - 27; and Column 8, lines 27 - 36).

Although the modulator and connection management computer (CMC) apparently communicate via an Ethernet connection (e.g., See Fig. 2), there is no direct communication between the set-top terminal (STT) and modulator 124. Rather, the set-top terminal (STT) communicates with the connection management computer (CMC) via QPSK demodulators (e.g., See Fig. 2; Column 8, lines 8 - 19). Since the connection management computer (CMC) (and not the set-top terminal (STT)) communicates with modulator 124, there is no reason for (or disclosure of) the set-top terminal (STT) receiving an identifier for modulator 124 and resolving the identifier to an IP address for that modulator as recited in the independent claims.

In addition, the Logston et al. patent discloses that the QSPK demodulators, QPSK modulator, and demultiplexer/modulator are all collocated at headend 112 (e.g., See Fig. 2), as opposed to the downstream modulators and upstream demodulator being remote from each other as recited in the independent claims.

Since the Farmer et al. and Logston et al. patents do not disclose, teach or suggest, either alone or in combination, the features recited in independent claims 1 and 5 as discussed above, these claims are considered to be in condition for allowance.

Claims 2 - 4, 6, and 8 depend, either directly or indirectly, from independent claims 1 or 5 and, therefore, include all the limitations of their parent claims. Claims 2 - 3, 6, and 8 have been amended for consistency with their amended parent claims. The dependent claims are considered to be in condition for allowance for substantially the same reasons discussed above in relation to their parent claims, and for further limitations recited in the dependent claims.

In view of the foregoing, Applicants respectfully request the Examiner to find the application to be in condition for allowance with claims 1 - 6, and 8. However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Filed concurrently herewith is a Petition (with payment) for an Extension of Time of One Month. Applicants hereby petition for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 05-0460.

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